REMARKS

Claims 1-24 remain in the application and have been rejected. Claims 1, 3, 4-12, 14, and 16-24, have been amended.

REJECTIONS UNDER 35 U.S.C. §112

Claims 1-24 have been rejected under 35 U.S.C. §112, second paragraph. As to independent claim 1, the Examiner raises two questions: (1) it is not clear why the step "determining said new address;" is necessary? and (2) "The new address is associated with the newly created object according to the first portion of the limitations, and yet the second portion of the limitations further indicates that "said new address" is associated with "objects referenced by the object." This leads to the erroneous situation where the same said new address being assigned to two different sets of objects."

In response to the above issues applicants have amended claim 1 to more clearly state how an object is restored from memory. Claim 1 now reads:

A method for restoring a persistently stored object of an object oriented environment established on a computer system having a volatile memory and a persistent storage, the method comprising steps of:

retrieving from said persistent storage a first list of first references to segments stored in said persistent storage;

retrieving all segments referenced in the first list and storing the segments in said volatile memory;

saving in said first list a difference between an old memory address~~,~~ at which the segment used to reside in the volatile memory~~,~~ and a new memory address at which said

segment is currently stored;

retrieving from said persistent storage a second list of second references to blocks, wherein the blocks are portions of segments and whereby at least one of said blocks contains an object description;

determining, from the second list, which segment contains the block where the object description of the persistently stored object is located;

having determined the segment in which the object description of the persistently stored object resides, retrieving the objection description;

creating a first object in said volatile memory using said object description retrieved from said segment; and

saving a new address of said first object in said second list in volatile memory;

initializing said first object with values taken from said object description;

determining the address of a second object description of a second object referenced in said first object; and

setting the address of said second object description as a reference in the object description of the first object.

With respect to claim 14, claim 14 has been amended and now reads:

A method for persistently storing objects of an object-oriented environment established on a computer system having a volatile memory and a persistent storage, the method comprising steps of:

allocating a plurality of segments in said volatile memory;

creating a first list of first references to said segments;

creating a second list of second references to blocks, wherein the blocks are portions of said segments;

allocating a block of one of said segments~~,~~;

creating a first object description for a first object, wherein the first object

description comprises values of variables belonging to the first object's class;

storing the first object description into said allocated block;

saving a new address of said first object description in the second list, wherein the new address is a memory address of said allocated block in the volatile memory where the first object description is stored;

adding reference to said first object description to the second list;

determining the address of a second object description of a second object referenced in said first object description;

setting the address of said second object description as a reference in the created first object description;

storing said second list on said persistent storage;

storing the plurality of segments referenced by said first list on said persistent storage; and

storing said first list on said persistent storage.

The Examiner raised the following questions as to claim 14: Claim 14 recites the step of "allocating segments in said volatile memory," Since the segments are allocated first and the blocks are portions of the segments, why is the step of "allocating a block of one of the segments necessary?

Applicants respond as follows: segments are allocated on demand, only when no free blocks of corresponding size are available. During operation, some objects can be deleted. Released blocks are added to the list(s) of available free blocks. So, when we allocate a segment, we add all its blocks to the list (it's an "intrusive" list -- the links to the next free block reside inside free blocks). A block is allocated by taking first available segment in the that list.

Claim 14 also recites among other things the step of "creating a first object description..." The address of the first object description is not defined up to this point, because the first portion of the limitations clearly states that the new address is associated with the first object and not the first object description. The amendment to claim 14 addresses this concern.

Claim 24 has been amended to correct a lack of antecedent basis and to more clearly state the program instructions for storing an object in memory. Claim 24 now reads:

A computer program product stored on a computer usable medium, comprising computer readable program instructions for:

allocating a plurality of segments in volatile memory;

creating a first list of first references to said segments;

creating a second list of second references to blocks, wherein the blocks are portions of said segments;

allocating a block of one of said segments,

creating a first object description of a first object, wherein the first object description comprises values of variables belonging to the first object's class;

storing the first object description into said allocated block;

saving a new address of said first object description in the second list, wherein the new address is a memory address of said allocated block in the volatile memory where the first object description is stored;

adding a reference to the first object description to the second list;

determining the address of a second object description of a second object referenced in said first object description;

setting the address of said second object description as reference in the created first object description;

storing said second list on persistent storage;

storing the plurality of segments referenced by said first list on said persistent storage; and

storing said first list on said persistent storage.

Independent claims 1, 14, and 24 have been amended to address all of the concerns raised in the Office Action. Dependent claims 3-12, and 16-23 have also been amended to correct lack of antecedent basis and to more accurately track the claim language of the their respective independent claims.

For the foregoing reasons, Applicant respectfully requests entry of the amendment and allowance of the pending claims.

Respectfully submitted,

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Date: Oct. 20, 2006

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I hereby certify that this Amendment and Response to Office Action, and any documents referred to as attached therein are being deposited with the United States Postal Service as First Class Mail on the date below, to the Commissioner for Patents, U.S. Patent and Trademark Office, P.O. Box 1450, Alexandria, VA 22313-1450.

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Date: **October 20, 2006**